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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,962	02/27/2002	Daniel J. Woodruff	114183-007 (P98-0040US2)	2206
7590	12/11/2006		EXAMINER	
Keith V. Rockey Kathleen A. Lyons Rockey Depke Lyons & Kitzinger LLC 233 South Wacker Drive, Suite 5450 Chicago, IL 60606			ZHENG, LOIS L	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 12/11/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/084,962

Applicant(s)

WOODRUFF ET AL.

Examiner

Lois Zheng

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1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 17-34 are currently under examination. No claim amendments are made in view of applicant's reply filed 29 September 2006.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 17 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lowery US 5,670,034(Lowery).

The teachings of Lowery are discussed in paragraph 4 of the previous Non-Final Office Action mailed 29 March 2006. The rejection grounds for the instant claims 17 and 21-22 are maintained for the same reasons as stated in paragraph 4 of this Non-Final Office Action.

4. Claims 17, 21-22 and 24-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Raalte et al. US 3,880,725(Van Raalte).

The teachings of Van Raalte are discussed in paragraph 5 of the previous Non-Final Office Action mailed 29 March 2006. The rejection grounds for the instant claims 17, 21-22 and 24-32 are maintained for the same reasons as stated in paragraph 5 of this Non-Final Office Action.

5. Claims 17-22 and 24-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Inagaki JP 59-150094(Inagaki).

The teachings of Inagaki are discussed in paragraph 6 of the previous Non-Final Office Action mailed 29 March 2006. The rejection grounds for the instant claims 17-22 and 24-34 are maintained for the same reasons as stated in paragraph 6 of this Non-Final Office Action.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohiko JP 04-311591(Hirohiko).

The teachings of Hirohiko are discussed in paragraph 8 of the previous Non-Final Office Action mailed 29 March 2006. The rejection grounds for the instant claims 17-29 are maintained for the same reasons as stated in paragraph 8 of this Non-Final Office Action.

8. Claims 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohiko in view of Van Raalte.

The teachings of Hirohiko in view of Van Raalte are discussed in paragraph 9 of the previous Non-Final Office Action mailed 29 March 2006. The rejection grounds for

the instant claims 30-34 are maintained for the same reasons as stated in paragraph 8 of this Non-Final Office Action.

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inagaki.

The teachings of Inagaki are discussed in paragraph 6 and 10 of the previous Non-Final Office Action mailed 29 March 2006. The rejection ground for the instant claim 23 is maintained for the same reasons as stated in paragraph 10 of this Non-Final Office Action.

### ***Response to Arguments***

10. Applicant's arguments, filed 29 September 2006, regarding Lowery reference have been fully considered but they are not persuasive.

In the remarks, applicant argues that the instant claim 17 "calls for the use of a primary anode and at least one secondary anode to provide a variable current to the semiconductor wafer" which "limits the structure of the secondary anode to an anode which is electrically independent of the primary anode to provide varying levels of voltage to the primary and secondary anodes".

The examiner does not find applicant's argument persuasive since the instant claim 17 only requires that the power source capable of producing a variable current to the primary and secondary anode. Instant claim 17 does not require that the primary and the secondary anodes to be separately connected and controlled. For example, even though the two anodes as taught by Lowery are commonly connected, they are still inherently capable of carrying the claimed varying current/voltage to the semiconductor wafer at the same time while being commonly connected(i.e.

current/voltage to the primary and the secondary anodes can be varied together in the apparatus of Lowery). Therefore, based on the broadest reasonable interpretation, the examiner maintains that the rejections based on Lowery reference are proper.

Applicant further argues that there is no support in the Lowery reference for examiner's statement that the anodes are inherently capable of providing claimed varying current.

The examiner does not find applicant's argument persuasive since simply turning on and off the power source would have produced different current/voltage variation based on the broadest reasonable interpretation.

11. Applicant's arguments, filed 29 September 2006, regarding Van Raalte reference have been fully considered but they are not persuasive.

Applicant argues that Van Raalte teaches plating of metal instead of claimed plating of a semiconductor wafer.

The examiner does not find applicant's argument persuasive since the instant claims are directed to an apparatus. The plating of a semiconductor wafer is merely the intended use for the instant apparatus, therefore, does not lend patentability to the instantly claimed apparatus. Furthermore, since Van Raalte teaches an apparatus that is structurally the same as the instantly claimed apparatus, the examiner concludes that the apparatus of Van Raalte is capable of plating a semiconductor wafer as claimed.

12. Applicant's arguments, filed 29 September 2006, regarding Inagaki and Hirohiko references have been fully considered but they are not persuasive.

Applicant argues that neither Inagaki nor Hirohiko teaches plating of metal instead of claimed plating of a semiconductor wafer.

The examiner does not find applicant's argument persuasive for the same reasons as stated in paragraph 12 above.

Applicant further argues that neither Inagaki nor Hirohiko expressly teach the claimed provision of variable current to primary and secondary anodes.

Regarding Hirohiko, one of ordinary skill in the art would have found it obvious to have varied the current to the primary and secondary anodes in order to control the plating speed and uniformity(see paragraph 8 of the previous Non-Final Office Action mailed 29 March 2006). Furthermore, simply turning on and off the power source of Hirohiko would have produced different current/voltage variation based on the broadest reasonable interpretation.

Regarding Inagaki, Inagaki teaches that its concentrically arranged anodes are independently connected to different power sources. Therefore, variable current can be applied to different anodes in the apparatus of Inagaki.

Therefore, the examiner does not find applicant's argument persuasive.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

ROY KING  
SUPERVISING PATENT EXAMINER  
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